The Cross-Cultural Effectiveness of CAI:
Some Cognitive and Affective Factors

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ABSTRACT

This is a comparative study using a Computer Assisted Instruction (CAI) supplement to a college-level introductory foreign language course. The supplement was used with classes at Potsdam College (SUNY) and at the Far East Advanced School of Theology in Baguio City, Republic of the Philippines. Five areas were explored: (1) Student Background and Characteristics, (2) Cognitive Style, (3) Course Achievement, (4) Time on task, and (5) Student Attitudes.

Cognitive Style was measured using Witkin's model of Field Independence/Field Dependence (FI/FD). The Asian students were more FD than the American Students. Time spent in the computer program correlated positively to FD; most affective scales correlated positively to FI. Students leaving the course with more positive feelings toward CAI were those who (1) used the computer more, (2) had higher GPA's, and (3) had lower levels of stress.

The Asian students spent significantly more time with the computer than the Americans, even though they had far less access to computing equipment. Computer time was related to the student's prior experience and personal interest in the course material. Time in CAI also correlated positively with certain measures of course achievement.

The study includes a detailed review of the state of computing in the geographic region.

An Intgegrated Authoring System for
Diagnostic Testing

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Abstract:

The IASDT (Integrated Authoring System for Diagnostic Testing) is a flexible, extensible authoring system designed to support the Mathematics Diagnostic Extension Project (MDE). MDE is a test suite designed to assess students' weaknesses and strengths in pre-calculus level math skills and provide this information to academic advisors. The MDE is implemented as an instance of a testing "shell" called IASDT that facilitates the development of diagnostic tests, tutorials, and drill and practice suites.

The IASD was intially developed in 1985 to deliver a diagnostic mathematics examination at the University of Minnesota, Morris under the direction of Dr. Campbell director of the UMM Academic Assistance Center (AAC). Before IASDT the examination was administered by a student tutor of the AAC presenting questions one at a time from a stack of index cards to the person taking the test. The IASDT was developed in order to overcome the drawbacks of an examination being delivered on index cards. The IASDT is an integrated environment specifically designed to support delivery of diagnostic examinations. The IASDT differs from other authoring systems in that the examiner may design exams that branch in several directions based upon the students performance on a given set of questions. Sets of questions are bundled into modules that correspond to nodes in a digraph.

The MDE has been used successfully at UMM since Fall 1985 to guide students into appropriate developemental courses. This paper describes both the historical development of the MDE (including the supporting IASDT) and how is has been used at UMM for the past four years.